

# Application of PURDUE Heavy-ion Group for sPHENIX Membership

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# PURDUE\* and Department of Phys. & Astro.

## PURDUE University:

- Location: ~160 miles south of Fermilab (~2.5 hour drive)
- Undergraduates: ~30000, Graduates: ~9000
- 20<sup>th</sup> best public university, tied for 60<sup>th</sup> overall in the US

## Department of Physics & Astronomy

- Faculties: 57
- Undergraduates: ~800, Graduates: ~160
- Graduate School ranking: 44<sup>th</sup>
- Silicon lab can be used for sPHENIX.

# PURDUE Heavy-ion Group

- ❑ Active faculties: **Fuqiang Wang & Wei Xie**
- ❑ Experiments:
  - STAR: **1 postdoc** and **2 grad. students**
  - CMS: **1 postdoc** and **2 grad. students**
- ❑ Support from **DOE**
- ❑ Personnel to apply for sPHENIX membership (for now): **Wei Xie**
  - **In the process of recruiting new students or postdocs.**
  - Member of PHENIX Collaboration (1997-2007)
    - **J/ $\psi$  analysis, PC1, RXNP.**
  - Member of STAR Collaboration (2007-present)
    - **Non-photonic electron, D meson analysis.**
  - Member of CMS Collaboration (2012-present)
    - **b/c-jet, D meson analysis.**

# Physics Interests & Hardware Interests

## Physics interests

- ❑ Differential & precision measurements of **open heavy flavor** probe in sQGP at RHIC.
  - Production & correlation of Heavy flavor jet and mesons, jet substructure.

## Hardware interests

- ❑ Participate **INTT** and/or MVTX
  - Discussion already initiated on INTT via Rachid's visit to PURDUE in May.
  - Planning contributions to **INTT ladder assembly, testing**.

# Facilities: PURDUE Silicon Lab

- ❑ High-end silicon lab for CMS high energy physics.
  - 3000 sq. ft. of clean rooms
  - <https://wiki.itap.purdue.edu/display/P3MDLab/P3MD+Lab+Home>
- ❑ Including most of the essential equipments for assembly and testing
  - Coordinate measuring machine
  - Semi-automated model assembly station
  - Wire bonder, probe stations
  - Module electrical test stations
  - Processing equipments
- ❑ Discussions ongoing on PURDUE contributions to INTT
  - Detailed cost estimate at PURDUE in progress.

